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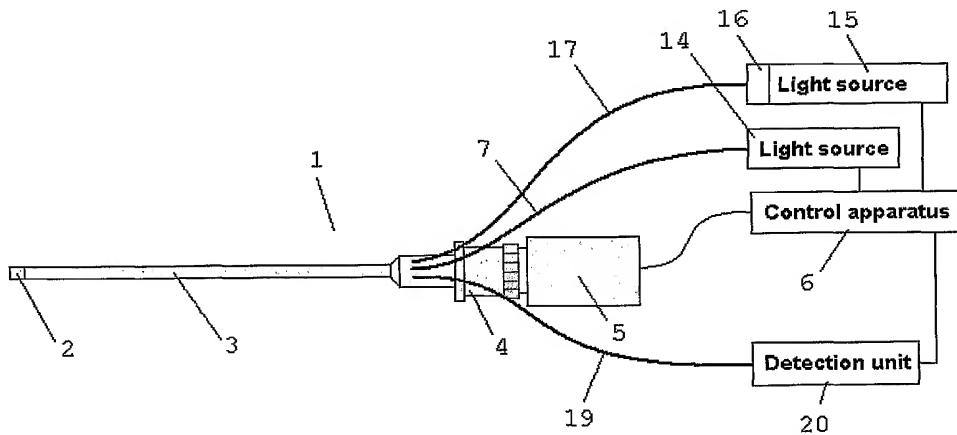
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(54) Title: AN ARRANGEMENT AND METHOD FOR ASSESSING TISSUE QUALITIES



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(57) **Abstract:** The invention described in an arrangement and a method for imaging and/or measuring tissue qualities, such as tissue thickness, tissue surface roughness and degree of tissue fiber linearization. The arrangement comprises at least one light generating means (8, 14, 15), at least one light detecting means (5, 20), a probe (1) with an extension (3), and possibly a control apparatus (6) including a signal processor (13) for processing the detected signals and/or images according to described procedures. Said extension (3) is designed to convey light from said light generating means (8, 14, 15) to said tissue for visualization and/or measurement, possibly using at least one fiber bundle (7, 17). Said extension (3) is also designed to convey light back-scattered from said tissue to said light detecting means (5, 20), possibly using at least one fiber bundle (19). Said detecting means (5, 20) is designed to measure the intensity and/or spatial distribution of light back-scattered from said tissue. The arrangement utilizes a new principle for tissue thickness assessment, based on the differences in absorption spectrum between tissue components, and a new principle for tissue fiber linearization assessment, based on differences in polarized light transport between linearized and non-linearized tissue.